$$\Leftrightarrow \quad 2\alpha - \frac{1}{\sqrt{\alpha+1}} = \alpha$$

$$\Leftrightarrow \quad \alpha = \frac{1}{\sqrt{\alpha+1}}$$

$$\Leftrightarrow \quad \sqrt{\alpha+1} = \frac{1}{\alpha}$$

$$\Leftrightarrow \quad \alpha+1 = \frac{1}{\alpha^2}$$

on

$$\mathcal{A}(\alpha) = \alpha^2 + \alpha - 2\sqrt{\alpha+1} + 2$$

$$= \alpha\left(\alpha+1\right) - 2\sqrt{\alpha+1} + 2$$

$$= \alpha \cdot \frac{1}{\alpha^2} - \frac{2}{\alpha} + 2$$

$$= \frac{1}{\alpha} - \frac{2}{\alpha} + 2$$

$$\mathcal{A}(\alpha) = 2 - \frac{1}{\alpha} \quad u.a$$